

Application No. 10/647,656
Filed: August 25, 2003
TC Art Unit: 1724
Confirmation No.: 2132

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A method for forming a vapor absorptive non-woven air filter for a semiconductor processing system comprising thermo-plastic fibers and adsorptive particles, said composite having a fiber density, comprising the steps of:

providing a non-woven carrier material having a surface and comprising thermo-plastic fibers; and

applying adsorbent particles of ~~an acidic polymer~~ a carboxylic acid copolymer to said surface of said carrier material to form a filter element for a semiconductor processing system.

2. (Original) The method of Claim 1 further comprising heating said carrier material and applied adsorbent particles; and

calendering the heated carrier material with said adsorbent particles distributed therein;

wherein said heating and calendering steps are performed for a period of time and under a pressure selected to be sufficient for said adsorbent particles to become retained within said heated and calendered carrier material to form a calendered composite having an open fibrous structure of said given fiber density with the surfaces of said distributed adsorbent particles

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being substantially exposed for contact with air passing through said calendered composite, said resulting non-woven air filter composite being characterized by a pressure drop sufficient for use as an air filter.

3. (Original) The method of Claim 1 wherein the acidic polymer comprises a sulfonated copolymer.

4. (Cancelled)

5. (Original) A method of forming a filter element comprising the steps of:

forming a layer of adsorbent powder material;

delivering binder onto selected regions of the layer of adsorbent powder material to bond the regions of adsorbent material in accordance with a programmed model; and

repeating steps (a) and (b) until a filter element matching the programmed model is formed.

6. (Original) The method of Claim 5 wherein the binder includes an acid-polymerizable or acid-cross-linkable liquid.

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7. (Previously Presented) The method of Claim 6 further comprising providing a powder material that includes a divinyl benzene styrene copolymer.

8. (Original) The method of Claim 5 further comprising the step of removing excess powder.

9. (Previously Presented) The method of Claim 5 further comprising forming a filter element for a semiconductor processing system.

10. (Previously Presented) The method of Claim 5 further comprising providing a filter including a sulfonated acidic group.

11. (Currently Amended) ~~The~~ The method of Claim 5 further comprising providing a filter including a carboxylic acid group.

12. (Previously Presented) The method of Claim 1 further comprising forming a filter having a particle size of between 0.3 and 1.2 mm.

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13. (Currently Amended) The method of Claim 1 further comprising forming a filter having a polymer pore size in a range of 50-400 angstroms.

14. (Previously Presented) The method of Claim 1 wherein the acidic polymer has an acidity of at least 1 milliequivalent/gram.

15. (Previously Presented) The method of Claim 1 wherein the acidic polymer has a acidity of at least 4 milliequivalents/grams.

16. (Previously Presented) The method of Claim 1 further comprising forming a filter element having a pleated structure.

17. (Previously Presented) The method of Claim 1 further comprising forming a filter having a plurality of filter elements in series.

18. (Previously Presented) The method of Claim 1 further comprising forming a filter having a second adsorbent material.

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19. (Previously Presented) The method of Claim 18 further comprising providing a second adsorbent material including an activated carbon.

20. (Previously Presented) The method of Claim 1 further comprising forming a filter that maintains a concentration of bases in the processing system below 2 ppb.